BEFORE
THE PUBLIC SERVICE COMMISSION
OF SOUTH CAROLINA

DOCKET NOS. 2019-185-E AND 2019-186-E

IN RE:	South Carolina Energy Freedom Act (H.3659) Proceeding to Establish Duke Energy Progress, LLC's and Duke Energy Carolinas, LLC's Standard Offer, Avoided Cost Methodologies, Form Contract Power Purchase Agreements, Commitment to Sell Forms, and Any Other Terms or Conditions Necessary (Includes Small Power Producers as Defined in 16 United States Code 796, as Amended) – S.C. Code Ann. Section 58-41-20(A)	**PRE-HEARING BRIEF OF THE SOUTH CAROLINA OFFICE OF REGULATORY STAFF**

This matter comes before the Public Service Commission of South Carolina ("the Commission") pursuant to the requirements in the South Carolina Energy Freedom Act ("Act 62").[1] According to Act 62,

> [a]s soon as is practicable after the effective date of this chapter, the commission shall open a docket for the purpose of establishing each electrical utility's standard offer, avoided cost methodologies, form contract power purchase agreements, commitment to sell forms, and any other terms or conditions necessary to implement this section....Within such proceeding the commission shall approve one or more standard form power purchase agreements for use for qualifying small power production facilities not eligible for the standard offer. ...The commission may approve multiple form power purchase agreements to accommodate various generation technologies and other project-specific characteristics....Any decisions by the commission shall be just and reasonable to the ratepayers of the electrical utility, in the public interest, consistent with PURPA and the Federal Energy Regulatory Commission's implementing regulations and orders, and nondiscriminatory to small power producers; and shall strive to reduce the risk placed on the using and consuming public....

See S.C. Code Ann. § 58-41-20.

[1] South Carolina Energy Freedom Act, H. 3659, 123rd Legislative Session (2019).

Per the analyses and calculations performed by the South Carolina Office of Regulatory Staff ("ORS") expert witness, the following rates should be ordered for Duke Energy Carolinas, LLC ("DEC"):

Avoided Energy[2]	Recommend adoption of avoided energy rates contained in Snider Exhibit 2
Avoided Capacity Summer On-Peak (cents/kWh)[3]	4.40
Avoided Capacity Winter AM On-Peak (cents/kWh)	3.60
Avoided Capacity Winter PM On-Peak (cents/kWh)	0.90
Integration Charge[4] (MWh)	$1.10

The ORS expert recommended the following rates be ordered for Duke Energy Progress, LLC ("DEP"):

Avoided Energy[2]	Recommend adoption of avoided energy rates contained in Snider Exhibit 2
Integration Charge[Error! Bookmark not defined.] (MWh)	$2.39

And

Avoided Capacity Rate	Summer On-Peak	Winter AM On-Peak	Winter PM On-Peak
Variable Credit (cents/kWh)	0.29	13.69	5.95
5-year Fixed Credit (cents/kWh)	0.30	13.95	6.07
10-year Fixed Credit (cents/kWh)	0.30	14.37	6.25

[2] Based on the review of ORS's expert witness, the avoided energy costs reflected by the Companies in their Standard Offer tariffs are a reasonable result of the Companies' calculations. Additionally, the calculation methodology is consistent with PURPA and the Commission's prior approval.

[3] ORS makes no recommendation to the DEC proposed variable and 5-year fixed capacity rates as there is no identified need for system capacity for DEC within the next five (5) years.

[4] The ORS expert recommended the integration charges be adopted as upper limits for solar integration service charges for contracts signed under the Standard Offers proposed by the Companies. According to ORS's expert, the Companies should conduct additional integration studies, and if lower incremental integration services charges were to be adopted for future offers, the integration services charges for this vintage of Standard Offer contracts should be updated to reflect those lower values starting with the effective date of the new offers.

I. STATEMENT OF THE CASE

Under Act 62, the Commission is expressly directed to consider and promote South Carolina's policy of encouraging renewable energy and ensuring the promotion of the public interest while ensuring that no costs or expenses incurred by the Companies in compliance with Act 62 are then borne by the Companies' general body of South Carolina customers without an affirmative finding, which authorizes such cost shift, made by the Commission.[5] The analysis and resulting recommendations put forth by ORS's witnesses follow the requirements set forth under At 62 and should be adopted by the Commission.

II. PROCEDURAL POSTURE

On May 23, 2019, the Commission opened Docket No. 2019-176-E to initiate a proceeding pursuant to Act 62 to "establish each electrical utility's standard offer, avoided cost methodologies, form contract power purchase agreements, commitment to sell forms, and any other terms or conditions necessary" as required by newly enacted S.C. Code § 58-41-20(A) (the "PURPA Implementation and Administration Provisions"). Subsequently, pursuant to a motion adopted by the Commission at its weekly agenda meeting on May 29, 2019, the Commission instructed the Chief Administrator to open separate dockets for each electrical utility in which the PURPA Implementation and Administration Provisions would be addressed. Accordingly, on May 30, 2019, Docket No. 2019-186-E was opened for DEP and Docket No. 2019-185-E was opened for DEC (DEP and DEC collectively referred to herein as the "Companies").

On September 13, 2019, the Commission issued Order Nos. 2019-104-H and 2019-105-H, in which it set a due date for the filing of pre-hearing briefs to September 23, 2019, and responses due on September 30, 2019. On September 16, 2019, via an e-mail correspondence, Commission

[5] *See* S.C. Code Ann. § 58-41-20(F)(2), S.C. Code Ann. § 58-41-20(G), and Section 16 of Act 62.

staff encouraged parties to file pre-hearing briefs. *See* E-mail from David Stark sent to all parties on September 16, 2019.

The Companies have filed the Direct Testimony of five witnesses. ORS filed the testimony of two witnesses, Robert Lawyer and Brian Horii. ORS witnesses Horii and Lawyer show that the Companies accurately quantified the avoided energy cost and utilized methodologies that are generally accepted in the industry and have been previously accepted by this Commission; however, each Company undervalued the avoided capacity costs and overestimated the integration charges. Through its witnesses, ORS will provide the Commission with substantial evidence in support of its recommended avoided capacity rates, which fairly quantify avoided costs and are in the public interest.

ORS's witness' recommendations result in an accurate and fair quantification of the Companies' avoided energy and capacity charges. The adoption by the Commission of ORS's recommendations would promote South Carolina's policy of encouraging renewable energy and public interest.

III. LEGAL ISSUES AND PRE-FILED TESTIMONY SUMMARY

1. The Companies' Avoided Energy Calculation

The Companies calculate avoided energy costs using a methodology known as the Differential Revenue Requirement ("DRR"). According to ORS witness Horii, this is one of the generally accepted methods for calculating PURPA avoided energy costs and is used throughout the United States. The most significant driver of avoided energy cost changes between the Companies' previous rate and the proposed rate is updated fuel price forecasts. Witness Horii testified that the updates to the Companies' avoided energy costs and rate design are a reasonable and consistent result of the methodology used by the Companies. The forecast methodologies and

values are consistent with market knowledge of fuel price forecasts and generator cost forecasts available at the time of the Companies' forecasts. Based on his review and analyses, witness Horii recommends no changes to the Companies' avoided energy calculations or resulting rates applicable to their standard offer tariffs. Based on witness Horii's review, the avoided energy costs reflected by the Companies in the Standard Offer tariffs are a reasonable result of the Companies' calculations. Additionally, he testified that the calculation methodology is consistent with PURPA and the Commission's prior approval.

2. The Companies' Avoided Capacity Calculations

The Companies use the "peaker" method to quantify the avoided cost of generation capacity. This method is one of the generally accepted methods for calculating PURPA avoided capacity costs and is used throughout the United States. While ORS witness Horii agrees with the Companies that the peaker method is acceptable, he does make two recommendations to the Companies' avoided capacity cost calculations:

1) Increase the Fixed Charge Rate for a CT; and
2) Correct the allocation of capacity costs to seasons and time of day.

First, DEC utilized an inflated economic life for the CT, rather than a 20-year economic life for the CT that is commonly used in jurisdictions like California for their electricity avoided costs, PJM for their Cost of New Entry report, and by the highly regarded Lazards Levelized Cost of Energy Analysis report. By using an inflated life in the Fixed Charge Rate calculation, DEC is spreading the capital-related costs of the CT over an excessive number of years and artificially lowering the estimate of costs that would need to be collected in each year for the CT owner. Correcting the CT life to 20 years in DEC's annualization tool provided by the Company resulted in an increase to the avoided capacity cost by 29%.

Second, while DEC correctly allocates the capacity costs based on the relative Loss of Load Expectation ("LOLE") in each time period, DEC uses LOLEs based on the level of solar penetration that will not be reached on the DEC system until it enters "Tranche 4." Tranche 4 is the highest level of solar penetration evaluated and reflects solar penetration levels far in exceedance of current levels. DEC's allocations of avoided capacity costs to season and time of day, therefore reflect capacity needs far into the future, rather than reflect what system capacity needs are presently or in the near term. This artificially lowers the cost of avoided capacity because the timing of the need for capacity presently, or in the near future, is not the same as the timing of the need for capacity when DEC enters Tranche 4 levels of solar penetration. At Tranche 4 levels of solar penetration, the need for system capacity shifts away from hours when the already installed solar is generating. Because these avoided capacity costs will be used to calculate compensation for solar in 2020, it is appropriate to use LOLEs that are based on current solar penetration levels.

For DEC, witness Horii recommends:

Avoided Capacity Summer On-Peak (cents/kWh)[6]	4.40
Avoided Capacity Winter AM On-Peak (cents/kWh)	3.60
Avoided Capacity Winter PM On-Peak (cents/kWh)	0.90

For DEP, witness Horii recommends:

Avoided Capacity Rate	Summer On-Peak	Winter AM On-Peak	Winter PM On-Peak
Variable Credit (cents/kWh)	0.29	13.69	5.95
5-year Fixed Credit (cents/kWh)	0.30	13.95	6.07
10-year Fixed Credit (cents/kWh)	0.30	14.37	6.25

[6] ORS makes no recommendation to the DEC proposed variable and 5-year fixed capacity rates as there is no identified need for system capacity for DEC within the next five (5) years.

3. The Companies' Integration Services Charge

According to witness Horii, integrating renewable generation does create additional costs for utilities. Mr. Horii's firm, E3, has observed that increasing amounts of solar and wind generation can require additional ramping capability and reserves to meet both the intermittent nature of solar and wind generation and the diurnal ramping characteristics of solar generation. The cost impact can include higher start-up costs, fuel costs, and O&M costs resulting from resources operating at levels below their maximum efficiency to allow upward headroom to ramp up output. Costs can also increase for additional generation plant required to provide additional flexible capacity. While the ORS expert witness does consider the Companies' analysis to be an acceptable approach to estimating solar integration costs, he offers two primary observations:

1) The results of the Study may indicate higher solar integration costs than would be required if the Companies sought to minimize those integration costs; and
2) The Companies' proposal to use average integration costs that update annually.

According to witness Horii, integration costs could potentially be reduced in the following ways:

1) If additional operating reserve requirements were dynamically linked to solar output levels and the varying risk of solar output reductions;
2) Employing improved solar output forecast methods to reduce the forecast error between expected and actual solar output; and
3) Employing pre-curtailment of solar to reduce the cost to address solar over-forecast error.

Regarding the Companies' proposal to use average integration costs that update annually, witness Horii believes that this practice would dampen this price signal and socialize the higher cost over both new and existing solar resources. According to witness Horii, this would encourage the over installation of solar beyond 2020 because the new solar entering the market would be subsidized by existing solar and would not be subject to the full cost of integrating onto the Companies' electric systems.

As a result, witness Horii believes the Companies' solar integration services charges of $1.10/MWh for DEC and $2.39/MWh for DEP should constitute an upper limit for the Companies' solar integration service charges for contracts signed under the Standard Offers proposed by the Companies. Additionally, witness Horii believes the Companies should conduct additional integration studies, and, if lower incremental integration services charges are adopted for future offers, the integration services charges for this vintage of Standard Offer contracts should be updated to reflect those lower values starting with the effective date of the new offers.

4. The Companies' Form Contract PPAs and Commitment to Sell Form Recommendations

According to witness Horii, the Companies' proposed notice of commitment to sell forms are consistent with the PURPA and the Federal Energy Regulatory Commission ("FERC") Implementation guidelines. The commitment to sell forms function to establish a non-contractual legally enforceable obligation ("LEO") option for a Qualifying Facility ("QF") that obligates the QF to sell and deliver its full output to the utility and the utility to purchase the delivered energy and capacity at the utility's avoided cost rates over the specified term length. Witness Horii believes that the Companies offered a ten-year contract term length with terms and conditions consistent with PURPA and FERC implementation guidelines.

Additionally, witness Horii believes the Companies' Standard Form PPA for Large QFs conforms to industry standards. Act 62 requires utilities to include 10-year contract terms in the Standard Offer. The Companies' Standard Offers include variable, 5-year, and 10-year term options and the associated rates are included in the proposed Standard Offer Tariffs. According to

witness Horii, the Standard Offer options are consistent with PURPA and are generally commercially reasonable.

However, witness Horii does also believe that aspects of the Companies' proposed terms and conditions are inconsistent with PURPA. According to witness Horii, the limitation that the PPA may be terminated if the QF produces energy in excess of the "estimated annual energy production" is inconsistent with PURPA's "mandatory obligation." According to witness Horii, the Companies' proposed Standard Offer contemplates refusal to accept the over-production, which violates PURPA standards. An alternative would be for the PPA to more clearly define the annual expected contract energy, with some expected variability due to changing weather conditions, and designate that any overproduction delivered to the utility will be compensated at the current approved variable rates as stated in the Standard Offer tariffs.

5. The Companies' Compliance with Other Portions of Act 62

ORS witness Lawyer discussed ORS's review of the Companies' compliance with certain sections of Act 62. Witness Lawyer testifies that ORS concluded the Companies' filings included each of the items required by Section 58-41-20(A) of the Act. Witness Lawyer states that ORS generally supports the modifications proposed by the Companies to the terms and conditions for the Standard Offer PPA.

ORS witness Lawyer does, however, recommend a change to the Companies' proposed Standard Offer tariffs (Schedule PP and Schedule PP-5), which refer to "biennial avoided cost proceedings" and state "Schedule will be updated every two years." The Commission may have the flexibility under Act 62 to determine when proceedings and/or updates occur, as long as it occurs "at least every twenty-four months." *See* 2019 Act 62 § 58-41-20(A). Thus, Act 62 provides the discretion to hold avoided cost proceedings on a more frequent basis than every 24

months, and ORS witness Lawyer recommends the Commission require the Companies to update the proposed Standard Offer tariffs, PPAs, and Terms and Conditions to conform to any temporal determination made by the Commission. ORS also recommends the Commission require the Companies provide updated forms to the Commission and ORS for review prior to implementing the forms to ensure compliance with any Commission orders.

Witness Lawyer also highlights that customers are ultimately responsible for all avoided cost payments through the annual fuel proceeding under S.C. Code Ann. 58-27-865, and that the Companies' integration services charges can help to limit subsidization of QF's by ratepayers.

ORS witness Lawyer submits that the ORS recommendations are just and reasonable to customers, consistent with PURPA and FERC regulations and orders, non-discriminatory to QF's, and serve to reduce the risk placed on the using and consuming public.

IV. CONCLUSION

ORS will present reliable and substantial evidence to support the Commission adopting ORS's recommendations. Based on the testimonies of ORS witnesses Horii and Lawyer, ORS recommends that the Commission:

1) Approve the Companies' proposed avoided energy rates for Standard Offer contracts;
2) Approve DEC's proposed variable and 5-year avoided capacity rates for Standard Offer contracts;
3) Modify DEC's 10-year avoided capacity rate for Standard Offer contracts as recommended by ORS;
4) Modify DEP's variable, 5-year, and 10-year avoided capacity rates for the Standard Offer contracts as recommended by ORS;
5) As an interim step, approve the integration services charges as proposed by the Companies;

6) Require the Companies to update their integration services study in conjunction with any proposed changes to the Standard Offers. As part of the update, the Companies should be required to conduct technical workshops to gain input from the solar community and other stakeholders;

7) Clarify QF performance standards to ensure that the Companies remain obligated to purchase all of the energy a QF generates, while limiting the changes a QF can make to its systems; and

8) Update the Companies' proposed Standard Offer tariffs, PPAs, and Terms and Conditions to conform to any determination the Commission may make with respect to the timing of the next avoided cost proceeding under Act 62 and require the Companies to provide updated forms to the Commission and ORS for review prior to implementing the forms to ensure compliance with any Commission orders.

ORS's recommendations result in a just and reasonable result for the Companies' customers while promoting South Carolina's policy of encouraging renewable energy.

Respectfully submitted,

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